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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/826,729	04/05/2001	Cecilia Brandel	47253-00003	6051

7590

03/29/2004

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EXAMINER

LEWIS, MICHAEL A

ART UNIT

PAPER NUMBER

2655

DATE MAILED: 03/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/826,729

**Applicant(s)**

BRANDEL ET AL.

**Examiner**

Lewis A Michael

**Art Unit**

2655

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2001.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-11 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 03 & 05.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1,4,6,9 & 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Dubnowski et al. (U.S. Patent 4015088).

Regarding claims 1 & 6, Dubnowski et al. discloses a method of estimating pitch in a speech signal, comprising the steps of (Abstract; Fig.1):

- a. Sampling the speech signal to obtain a series of samples, dividing the series of samples into segments [words], each segment having a fixed number of consecutive samples (10 ms) (Col 7, Line 55; Col 6, Line 18)
- b. Calculating for each segment a conformity function for the signal, detecting peaks in the conformity function (Fig 1, 21, 22), the method further comprising the steps of:
  - providing an intermediate signal derived from the speech signal, converting said intermediate signal to a binary signal, said binary signal being set to logical "1" where the

intermediate signal exceeds a pre-selected threshold and to logical "0" where the intermediate signal does not exceed the pre-selected threshold (Col 8, Line 33 –68). Dubnowski describes a clipper processor [peak picker] that basically assigns a logical representation of the peak by giving it a value of -1, 0, +1 based on its strength about a predetermined threshold. Additional coding is added to make it a 2 bit digital word [claimed binary signal] (Col 9, line 9 and Col 10, Line 46).

- c. Calculating an autocorrelation of the binary signal, and using distance between peaks in the autocorrelation of the binary signal as an estimate of the pitch (Col 9, Line 64; Col 11, Line 5).

Regarding claims 4 & 9, Dubnowski et al. disclose a method of: selecting, if the peak corresponding to the distance between the peaks is represented by a number of samples, the sample having the maximum amplitude of said conformity function as the estimate of the pitch (Col 11, Lines 10 – 15).

Regarding claim 11, Dubnowski et al. disclose a device that is an integrated circuit [clipping and autocorrelation processor] (Fig. 1).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 2,3,7 & 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dubnowski (U.S. Patent 4015088) and further in view of Sasaki (U.S. Patent 6377915).

Regarding claims 2,3,7 & 8, Dubnowski et al. do not disclose a method wherein the intermediate or autocorrelation signal is provided by filtering the speech signal through a filter based on a set of filter parameters estimated by using linear predictive analysis (LPA). However, Sasaki teaches the use of LP analysis and filtering function in a decoder (Fig1 (117) & (120)). Linear prediction analysis is commonly used to obtain linear prediction coefficients in the modeling of speech and filtering.

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Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify Dubnowski et al. with the use of LP analysis and filtering as taught by Sasaki since it the most efficient means of processing speech.

6. Claims 5 & 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dubnowski et al. (U.S. Patent 4015088) in view of McDonough (U.S. Patent 5784532).

Regarding claims 5 & 10, Dubnowski et al. do not disclose the use in a mobile telephone. However, McDonough et al. teach the use of a pitch detector used in a voice coder in a mobile phone. Voice coders that utilize a pitch feature are commonplace in digital communication systems including mobile phones.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify Dubnowski et al. with the use in a mobile phone as taught by McDonough et al. since it would have benefited such a system to use a less computationally intensive pitch detection algorithm.

### **Conclusion**

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Chihara	U.S. Patent Application (200100221906)
Marley	U.S. Patent (4783807)
Kitawaki et al.	U.S. Patent (4081605)
Uchiyama	U.S. Patent (5121428)
Huang et al.	U.S. Patent (6418407)
Ireton et al.	U.S. Patent (6047254)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lewis A Michael whose telephone number is 703 505-8730. The examiner can normally be reached on Monday through Friday, 8:30 am – 5 pm.

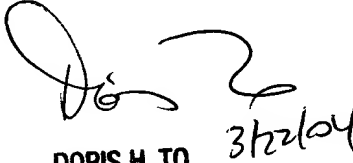
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, To Doris can be reached on (703)305-4827. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lewis A Michael  
Examiner  
Art Unit 2655

Mal

3/16/2004

  
DORIS H. TO 3/22/04  
SUPERVISORY PATENT EXAMINER  
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